Listing of the Claims

1-7 (Canceled)

8. (Currently Amended) ~~The apparatus of claim 7, wherein the processor is configured to compute~~ A miniature autonomous apparatus for scene interpretation, comprising:

a digital camera for producing an image of a scene; and

a processor associated with said camera, said processor adapted to run at least a dynamic range control process and an image processing detection process, wherein the image detection process includes at least a first process for assigning for each received pixel a pixel type out of a plurality of possible pixel types, and wherein at least pixels of a first pixel type are further processed according to at least a second process not performed upon pixels with different types; and

wherein the dynamic range control process is adapted to change the dynamic range settings of the camera, and is in communication with the image processing detection process such that when dynamic range is changed, the image detection process adapts itself to the new dynamic range setting;

wherein the processor is configured to:

determine an initial parametric representation of said scene including compute at least an average pixel image and a standard deviation pixel image from said plurality of acquired images;

update said parametric representation according to predefined criteria;

analyze pixels of said image so as to determine which of said pixels are hot pixels, according to predefined criteria;

define at least one target from said hot pixels;

measure predefined parameters for at least one of said at least one target; and

determine for at least one of said at least one target whether said target is of interest, according to application-specific criteria.

9. (Currently Amended) ~~The apparatus of claim 7, wherein the processor is configured to compute~~ A miniature autonomous apparatus for scene interpretation, comprising:

a digital camera for producing an image of a scene; and

a processor associated with said camera, said processor adapted to run at least a dynamic range control process and an image processing detection process, wherein the image detection process includes at least a first process for assigning for each received pixel a pixel type out of a plurality of possible pixel types, and wherein at least pixels of a first pixel type are further processed according to at least a second process not performed upon pixels with different types; and

wherein the dynamic range control process is adapted to change the dynamic range settings of the camera, and is in communication with the image processing detection process such that when dynamic range is changed, the image detection process adapts itself to the new dynamic range setting;

wherein the processor is configured to:

determine an initial parametric representation of said scene including compute at least a minimum pixel value image and a maximum pixel value image from said plurality of acquired images;

update said parametric representation according to predefined criteria;

analyze pixels of said image so as to determine which of said pixels are hot pixels, according to predefined criteria;

define at least one target from said hot pixels;

measure predefined parameters for at least one of said at least one target; and

determine for at least one of said at least one target whether said target is of interest, according to application-specific criteria.

10. (Currently Amended) ~~The apparatus of claim 7, wherein the processor is configured to compute~~ A miniature autonomous apparatus for scene interpretation, comprising:

a digital camera for producing an image of a scene; and

a processor associated with said camera, said processor adapted to run at least a dynamic range control process and an image processing detection process, wherein the image detection process includes at least a first process for assigning for each received pixel a pixel type out of a plurality of possible pixel types, and wherein at least pixels of a first pixel type are further processed according to at least a second process not performed upon pixels with different types; and

wherein the dynamic range control process is adapted to change the dynamic range settings of the camera, and is in communication with the image processing detection process such that when dynamic range is changed, the image detection process adapts itself to the new dynamic range setting;

wherein the processor is configured to:

determine an initial parametric representation of said scene including compute at least an average derivative value image and a standard deviation derivative pixel value image from said plurality of acquired images;

update said parametric representation according to predefined criteria;

analyze pixels of said image so as to determine which of said pixels are hot pixels, according to predefined criteria;

define at least one target from said hot pixels;

measure predefined parameters for at least one of said at least one target; and

determine for at least one of said at least one target whether said target is of interest, according to application-specific criteria.

11. (Previously Presented) The apparatus of claim 8, wherein the processor is configured to compute, for each pixel of said parametric representation, a new average pixel value and a new standard deviation value, using the value of a newly acquired pixel and a predetermined weight coefficient.

12. (Previously Presented) The apparatus of claim 9, wherein the processor is configured to compute, for each pixel of said parametric representation, a new minimum pixel value and a new maximum pixel value, according to the value of a newly acquired pixel.

13. (Previously Presented) The apparatus of claim 12, wherein between said new minimum pixel value and a previous minimum pixel value there is a maximum difference equal to 1, and between said new maximum pixel value and a previous maximum pixel value there is a maximum difference equal to 1.

14. (Previously Presented) The apparatus of claim 10, wherein the processor is configured to compute, for each pixel of said parametric representation, a new average derivative pixel value and a new standard deviation derivative value, using the value of a newly acquired pixel and a predetermined weight coefficient.

15. (Previously Presented) The apparatus of claim 8, wherein the processor is configured to compute whether a pixel is a hot pixel by comparing a difference between an actual value and an average value of said pixel with the standard deviation of said pixel.

16. (Previously Presented) The apparatus of claim 9, wherein the processor is configured to compute whether a pixel is a hot pixel by comparing a difference between an actual value and the minimum and maximum values of said pixels.

17. (Previously Presented) The apparatus of claim 10, wherein the processor is configured to compute whether a pixel is a hot pixel by comparing the difference between an actual derivative value and an average derivative value of said pixel with the standard deviation derivative of said pixel.

2-26 (Cancelled)

27. (Currently Amended) ~~The method of claim 26, wherein computing said initial parametric representation of said scene comprises~~ A method of scene interpretation, comprising:

determining an initial parametric representation of said scene;

updating said parametric representation according to predefined criteria;

acquiring an image of said scene;

analyzing said image by determining which of said pixels are hot pixels, according to predefined criteria;

defining at least one target from said hot pixels;

measuring predefined parameters for at least one of said at least one target; and

determining, for at least one of said at least one target whether said target is of interest, according to application-specific criteria; and

outputting the results of said analysis;

wherein determining an initial parametric representation of said scene comprises computing said initial parametric representation from a plurality of acquired images and computing an average pixel image and a standard deviation pixel image from said plurality of acquired images.

28. (Currently Amended) ~~The method of claim 26, wherein computing said initial parametric representation of said scene comprises.~~ A method of scene interpretation, comprising:

determining an initial parametric representation of said scene;

updating said parametric representation according to predefined criteria;

acquiring an image of said scene;

analyzing said image by determining which of said pixels are hot pixels, according to predefined criteria;

defining at least one target from said hot pixels;

measuring predefined parameters for at least one of said at least one target; and

determining, for at least one of said at least one target whether said target is of interest, according to application-specific criteria; and

outputting the results of said analysis;

wherein determining an initial parametric representation of said scene comprises computing said initial parametric representation from a plurality of acquired images and computing a minimum pixel value image and a maximum pixel value image from said plurality of acquired images.

29. (Currently Amended) ~~The method of claim 26, wherein computing said initial parametric representation of said scene comprises~~ A method of scene interpretation, comprising:

determining an initial parametric representation of said scene;

updating said parametric representation according to predefined criteria;

acquiring an image of said scene;

analyzing said image by determining which of said pixels are hot pixels, according to predefined criteria;

defining at least one target from said hot pixels;

measuring predefined parameters for at least one of said at least one target; and

determining, for at least one of said at least one target whether said target is of interest, according to application-specific criteria; and

outputting the results of said analysis;

wherein determining an initial parametric representation of said scene comprises computing said initial parametric representation from a plurality of acquired images and computing an average derivative value image and a standard deviation derivative pixel value image from said plurality of acquired images.

30. (Previously Presented) The method of claim 27, wherein updating said parametric representation comprises computing, for each pixel of said parametric representation, a new average pixel value and a new standard deviation value, using the value of a newly acquired pixel and a predetermined weight coefficient.

31. (Previously Presented) The method of claim 28, wherein updating said parametric representation comprises computing, for each pixel of said parametric representation, a new minimum pixel value and a new maximum pixel value, according to the value of a newly acquired pixel.

32. (Previously Presented) The method of claim 31, wherein between said new minimum pixel value and a previous minimum pixel value there is a maximum difference equal to 1, and between said new maximum pixel value and a previous maximum pixel value there is a maximum difference equal to 1.

33. (Previously Presented) The method of claim 29, wherein updating said parametric representation comprises means for computing, for each pixel of said parametric representation, a new average derivative pixel value and a new standard deviation derivative value, using the value of a newly acquired pixel and a predetermined weight coefficient.

34. (Previously Presented) The method of claim 27, wherein determining whether a pixel is hot comprises comparing the difference between an actual value and an average value of said pixel with the standard deviation of said pixel.

35. (Previously Presented) The method of claim 28, wherein determining whether a pixel is a hot pixel comprises comparing the difference between an actual value and the minimum and maximum values of said pixels.

36. (Previously Presented) The method of claim 29, wherein determining whether a pixel is a hot pixel comprises comparing the difference between an actual derivative value and an average derivative value of said pixel with the standard deviation derivative of said pixel.

37-55 (Cancelled)